# 2. RISK-BASED END STATE VISION: REGIONAL CONTEXT

Section 2 provides information on physical features and land use for the five-county region in which the INEEL Site is located. Maps showing current conditions and anticipated conditions in 2035 follow each section of narrative.

## 2.1 Physical and Surface Interface

The INEEL is located in southeast Idaho, near the northeast end of Idaho's Snake River Plain, which extends in a broad arc from the Idaho-Oregon border on the west to the Yellowstone Plateau on the east. The Snake River Plain is a broad, fairly flat basin with a floor of basalt lava flows and sediments and is characterized by a semiarid environment (see Figure 2-1).

The plain transects and sharply contrasts with the adjacent mountainous country. Surface elevations on the plain decrease gradually from about 6,500 ft above sea level near Yellowstone National Park to about 2,100 ft above sea level near the Idaho-Oregon border. The summits of mountains surrounding the plain reach more than 12,000 ft in elevation.

There are a number of rivers on the Snake River Plain. The Snake River is located about 50 miles east of the INEEL Site. The Big Lost River originates west of the Site and drains an area of about 1,400 square miles. It enters the INEEL Site on the southwest end, flows east, then flows northward, and terminates in a playa called the Big Lost River Sinks in the northwest portion of the INEEL Site, where the water evaporates or infiltrates into the ground.

The Snake River Plain Aquifer, consisting primarily of basalts and sediments and the groundwater stored in these materials, is among the nation's largest aquifers. It extends about 200 miles through eastern Idaho, encompasses about 9,600 square miles, and stores 1–2 billion acre-feet of water, roughly the same volume contained in Lake Erie. In 1991, the EPA designated the Snake River Plain Aquifer a sole-source aquifer. A sole-source aquifer is one that supplies at least 50% of the drinking water consumed in the area overlying the aquifer. About 9% of the aquifer lies beneath the INEEL Site at depths ranging from 200 to 1,000 ft below ground surface.

A map showing the location of the INEEL Site in relation to major physical features in the region is provided as Figure 2-1a. There is no difference between the current state and end state, as no changes in the Site’s boundaries or regional physical features are anticipated.

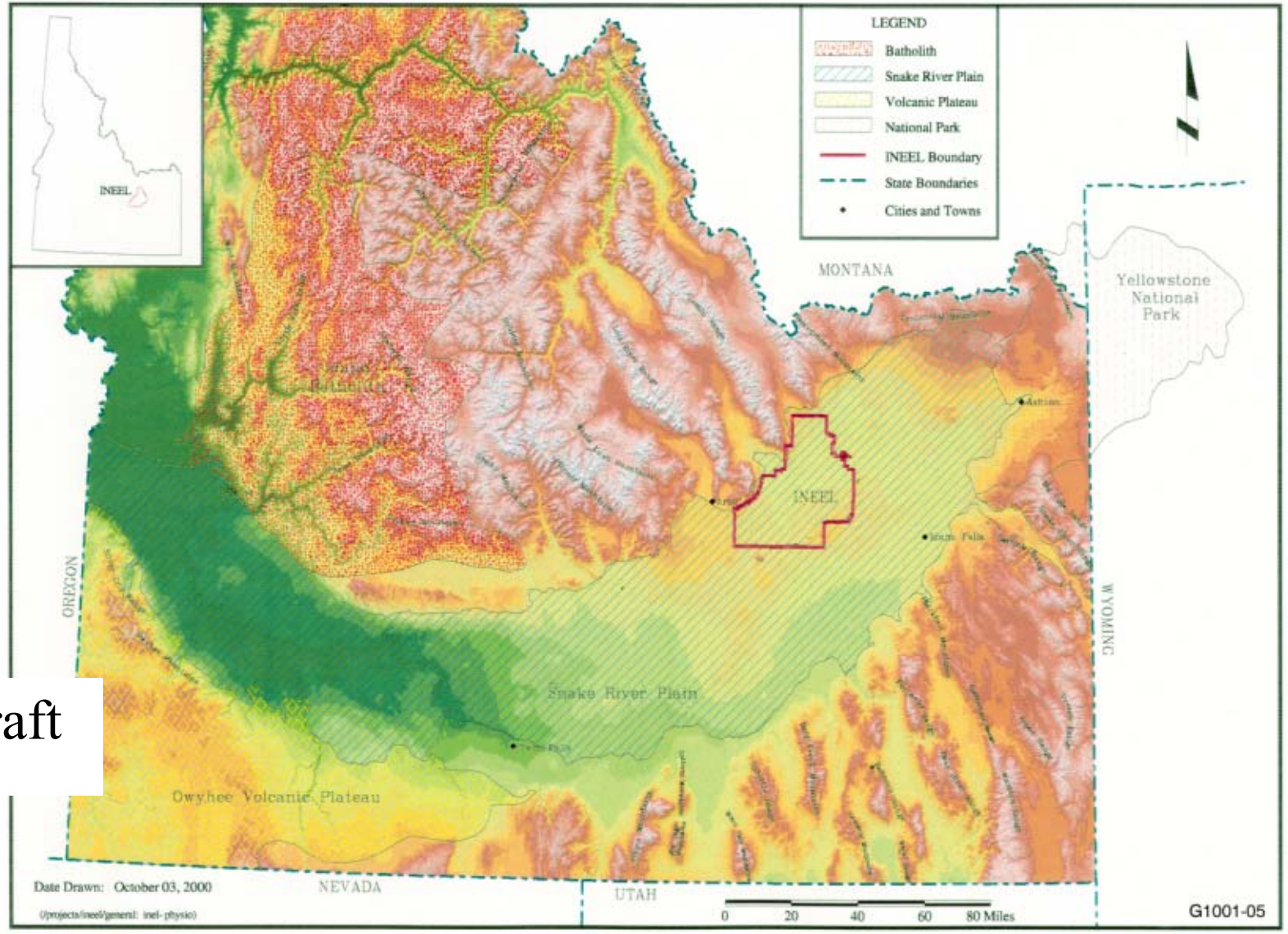


Figure 2-1. The Snake River Plain.

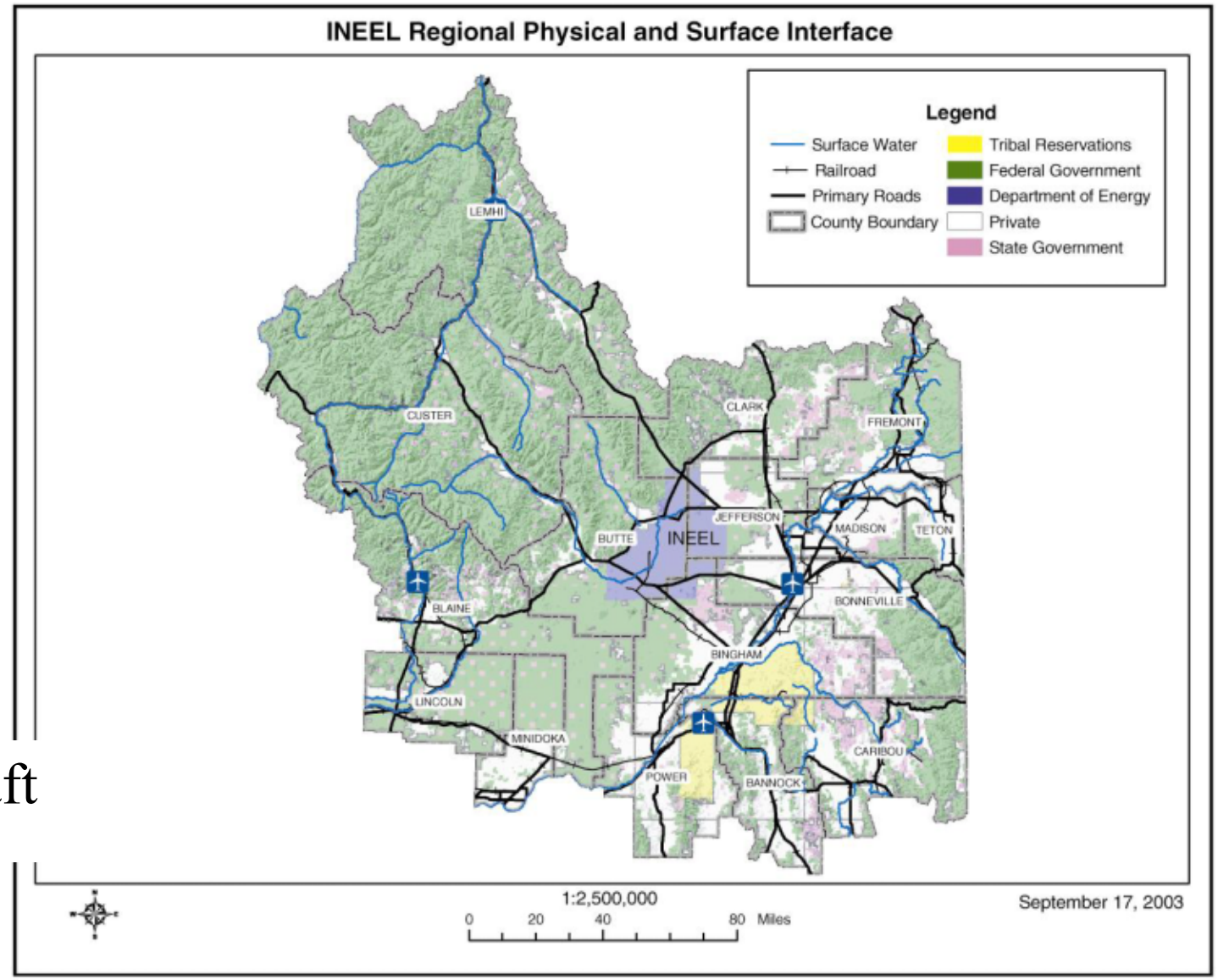


Figure 2-1a. Regional physical and surface interface—current state.

## 2.2 Human and Ecological Land Use

Lands immediately surrounding the INEEL Site are owned by the federal government, the State of Idaho, and private parties. Land uses on federally owned land next to the INEEL consist of grazing, wildlife management, mineral and energy production, and recreation. State-owned lands are used for grazing, wildlife management, and recreation. Private lands near the INEEL are used primarily for grazing and farming. Irrigated farmlands make up about 25% of the land bordering the INEEL.

Several small rural communities are scattered around the borders of the INEEL: Howe, Mud Lake, Atomic City, Butte City, and Arco. The larger communities of Rexburg, Idaho Falls, Blackfoot, and Pocatello are located to the east and southeast of the INEEL Site. The Fort Hall Indian Reservation is located approximately 30 miles southeast of the INEEL Site.

Recreational activities in the five-county region around the INEEL include hunting, fishing, boating, hiking, cross-country skiing, and camping. Major recreational and tourist attractions in the general region surrounding the INEEL Site include the Craters of the Moon National Monument, Sawtooth National Recreation Area, Yellowstone National Park, Grand Teton National Park, and the Snake River.

Agricultural and open lands are the dominant types of land in the five counties surrounding the INEEL Site. When combined, these two land types account for 90% of the area. About 1.2 million acres in the five-county region are used for cropland. This region also produces about 105,000 head of livestock annually.

The Snake River Plain Aquifer is a major component of the region's agricultural industry. Groundwater use on the Snake River Plain includes irrigation, food processing, aquaculture, and domestic, rural, public, and livestock water supplies.

Maps showing regional land use for the current and end state are provided as Figures 2-2a and 2-2b. The maps are identical, with the exception of anticipated population growth in some communities. No significant changes in the regional land use are expected.

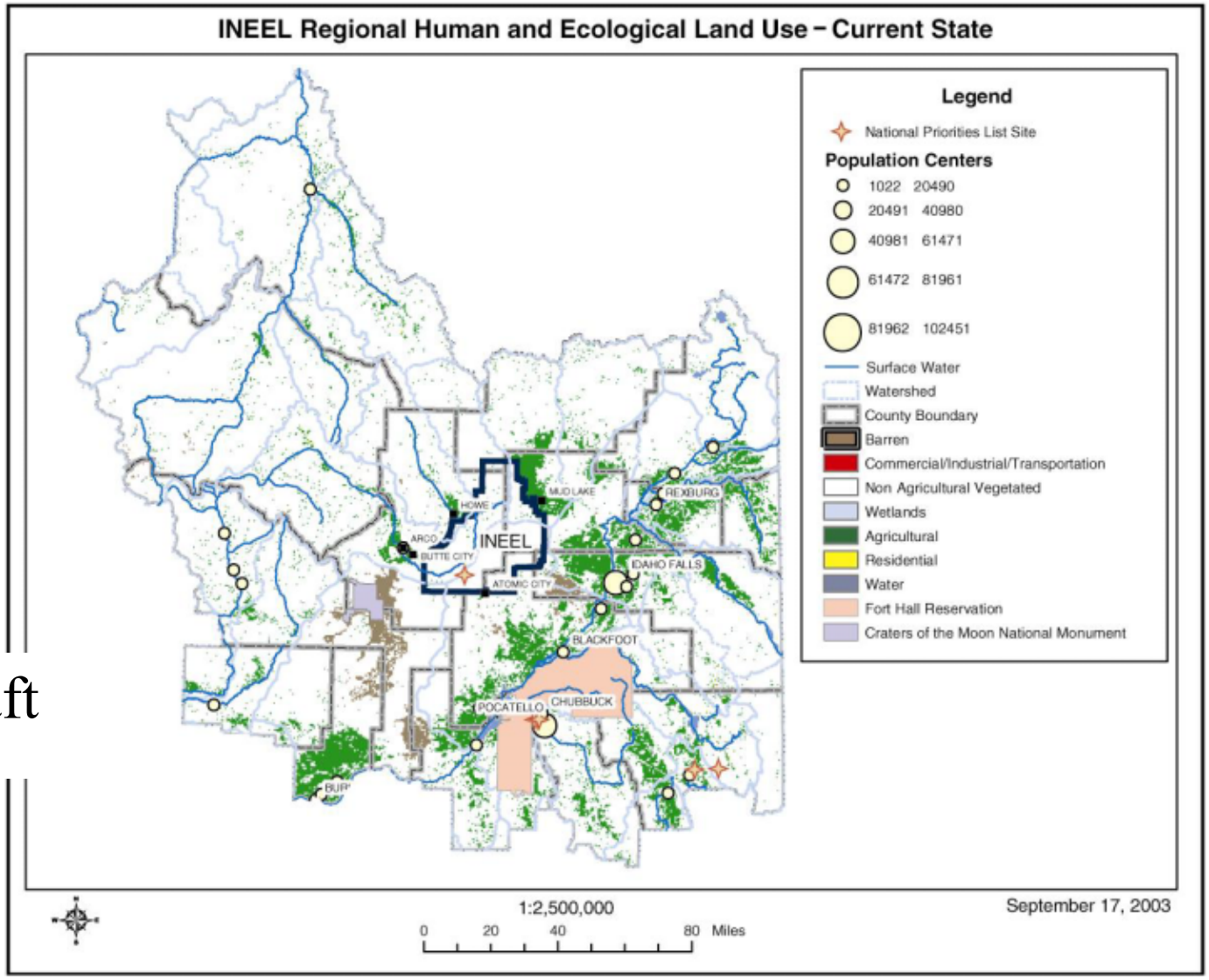


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Figure 2-2a. Regional human and ecological land use—current state.

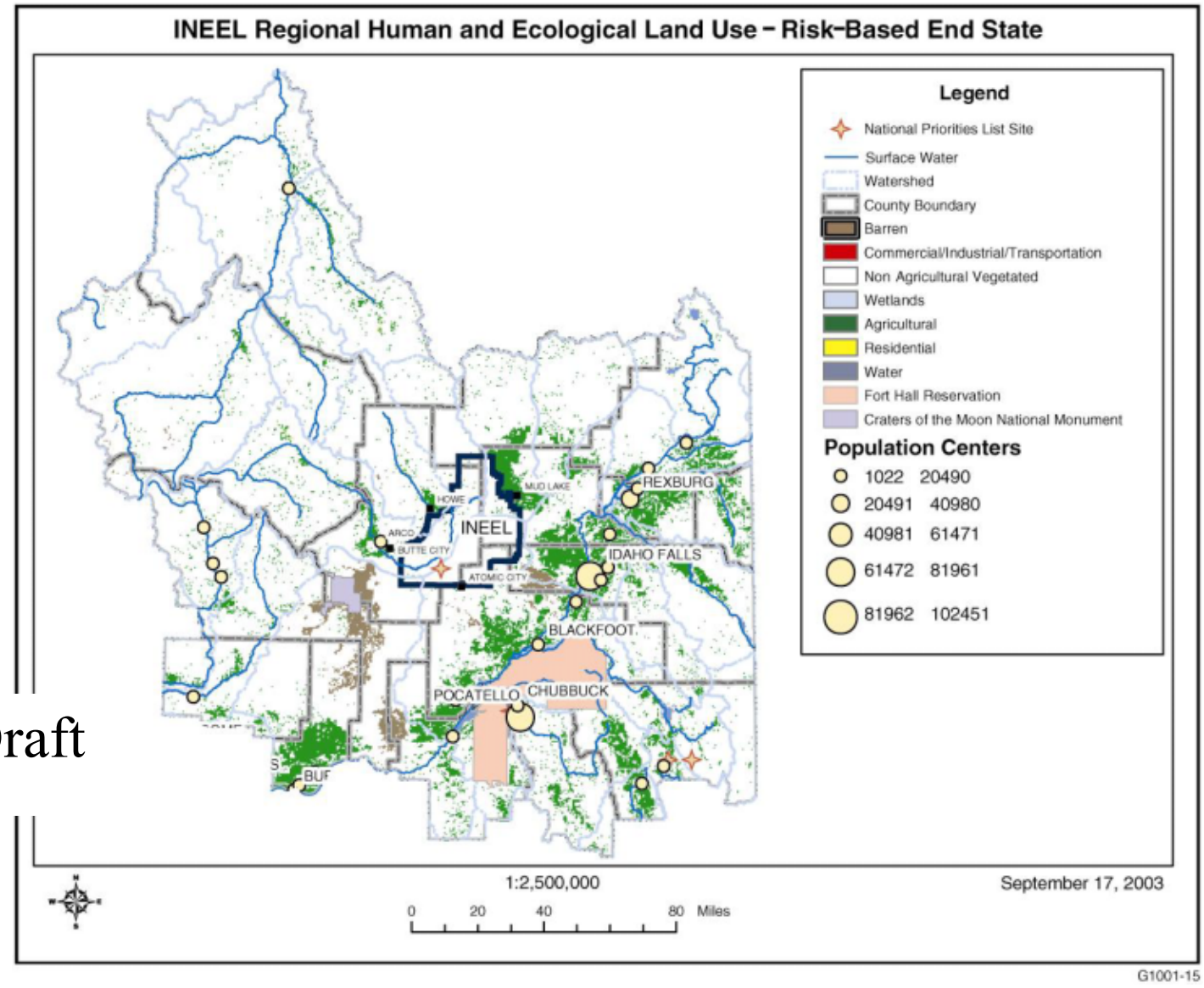


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Figure 2-2b. Regional human and ecological land use—risk-based end state.